Product Specification
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(   ) Preliminary Specifications
(V) Final Specifications

Module	13.3"(13.25") HD 16:9 Color TFT-LCD with LED Backlight design
Model Name	B133XW03 V1 (H/W:1A ; DP/N : KK736)
Note	*LED Backlight with driving circuit design* ✓ *Color Management (Virtual and Rich Color Solution)* ✓ *Dynamic Contrast Ratio (Power Saving Solution)*

Customer	Date
Checked & Approved by	Date

Note: This Specification is subject to change without notice.

Approved by	Date
Flossie Chuang	09/29/2010
Prepared by	
Kay CY Wang	09/28/2010

NBBU Marketing Division
AU Optronics corporation

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Record of Revision

Version and Date	Page	Old description	New Description	Remark
0.1 2010/08/28	All	First Edition for Customer		
1.0 2010/09/29	P.28	EDID: TBD	A00 Version EDID	
	All		Final Version for Dell A00 release	

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1. Handling Precautions

1) Since front polarizer is easily damaged, pay attention not to scratch it.
2) Be sure to turn off power supply when inserting or disconnecting from input connector.
3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
4) When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
5) Since the panel is made of glass, it may break or crack if dropped or bumped on hard surface.
6) Since CMOS LSI is used in this module, take care of static electricity and insure human earth when handling.
7) Do not open nor modify the Module Assembly.
8) Do not press the reflector sheet at the back of the module to any directions.
9) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
11) After installation of the TFT Module into an enclosure (Notebook PC Bezel, for example), do not twist nor bend the TFT Module even momentary. At designing the enclosure, it should be taken into consideration that no bending/twisting forces are applied to the TFT Module from outside. Otherwise the TFT Module may be damaged.
12) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.
13) Disconnecting power supply before handling LCD modules, it can prevent electric shock, DO NOT TOUCH the electrode parts, cables, connectors and LED circuit part of TFT module that a LED light bar build in as a light source of back light unit. It can prevent electrostic breakdown.

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2. General Description

B133XW03 V1 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel, a driver circuit, and LED backlight system. The screen format is intended to support the 16:9 HD, 1366(H) x768(V) screen and 262k colors (RGB 6-bits data driver) with LED backlight driving circuit. All input signals are LVDS interface compatible.

B133XW03 V1 is designed for a display unit of notebook style personal computer and industrial machine.

2.1 General Specification

The following items are characteristics summary on the table at 25 ℃ condition:

Items	Unit	Specifications			
Screen Diagonal	[mm]	336.6 (13.25W")			
Active Area	[mm]	293.42 X 164.97			
Pixels H x V		1366x3(RGB) x 768			
Pixel Pitch	[mm]	0.2148X0.2148			
Pixel Format		R.G.B. Vertical Stripe			
Display Mode		Normally White			
White Luminance (I_{LED}=20mA) (Note: ILED is LED current)	[cd/m^2]	200 typ. (5 points average) 170 min. (5 points average)			
Luminance Uniformity		1.25 max. (5 points)			
Contrast Ratio		400 typ, 300 min.			
Response Time	[ms]	8 typ / 16 Max			
Nominal Input Voltage VDD	[Volt]	+3.3 typ.			
Power Consumption	[Watt]	3.0 max. (Include Logic and Blu power)			
Weight	[Grams]	290 max.			
Physical Size Include bracket	[mm]		Min.	Typ.	Max.
		Length	313.6	314.1	314.6
		Width	188.2	188.7	189.2
		Thickness	-	-	3.6
Electrical Interface		1 channel LVDS			
Glass Thickness	[mm]	0.5			
Surface Treatment		Anti-Glare, Hardness 3H			
Support Color		262K colors (RGB 6-bit)			

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Temperature Range		
Operating	[^{o}C]	0 to +50
Storage (Non-Operating)	[^{o}C]	-20 to +60
RoHS Compliance		RoHS Compliance

2.2 Optical Characteristics

The optical characteristics are measured under stable conditions at 25℃ (Room Temperature) :

| Item	Symbol	Conditions	Min.	Typ.	Max.	Unit	Note
White Luminance I$_{LED}$=20mA		5 points average	170	200	-	cd/m^2	1, 4, 5.
Viewing Angle	θ R θ L	Horizontal　　(Right) CR = 10　　(Left)	40 40	45 45	- -	degree	4, 9
	ϕ H ϕ L	Vertical　　(Upper) CR = 10　(Lower)	10 30	15 35	- -		
Luminance Uniformity	δ 5P	5 Points	-	-	1.25		1, 3, 4
Luminance Uniformity	δ_{13P}	13 Points	-	-	1.50		2, 3, 4
Contrast Ratio	CR		400	500	-		4, 6
Cross talk	%				4		4, 7
Response Time	T$_{RT}$	Rising + Falling	-	8	16	msec	4, 8
Color / Chromaticity Coodinates	Red Rx	CIE 1931	0.560	0.590	0.620		4
	Ry		0.315	0.345	0.375		
	Green Gx		0.295	0.325	0.355		
	Gy		0.510	0.540	0.570		
	Blue Bx		0.120	0.150	0.180		
	By		0.115	0.145	0.175		
	White Wx		0.283	0.313	0.343		
	Wy		0.299	0.329	0.359		
NTSC	%		-	45	-		

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Note 1: 5 points position (Ref: Active area)
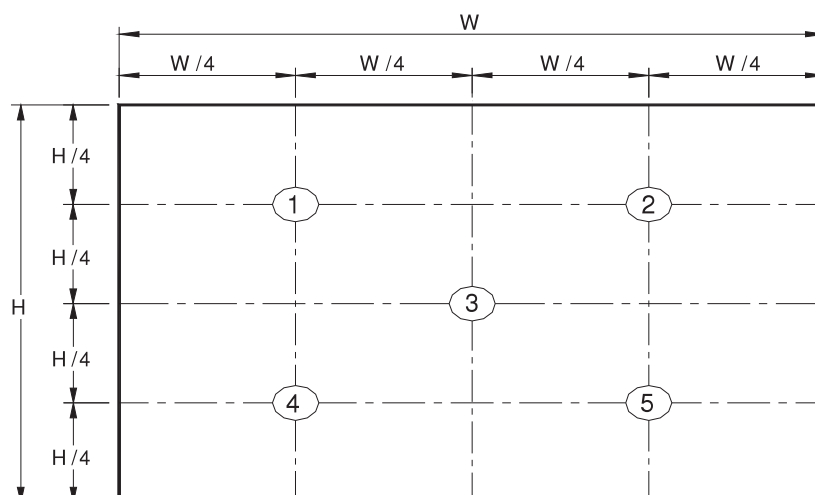
Note 2: 13 points position (Ref: Active area)
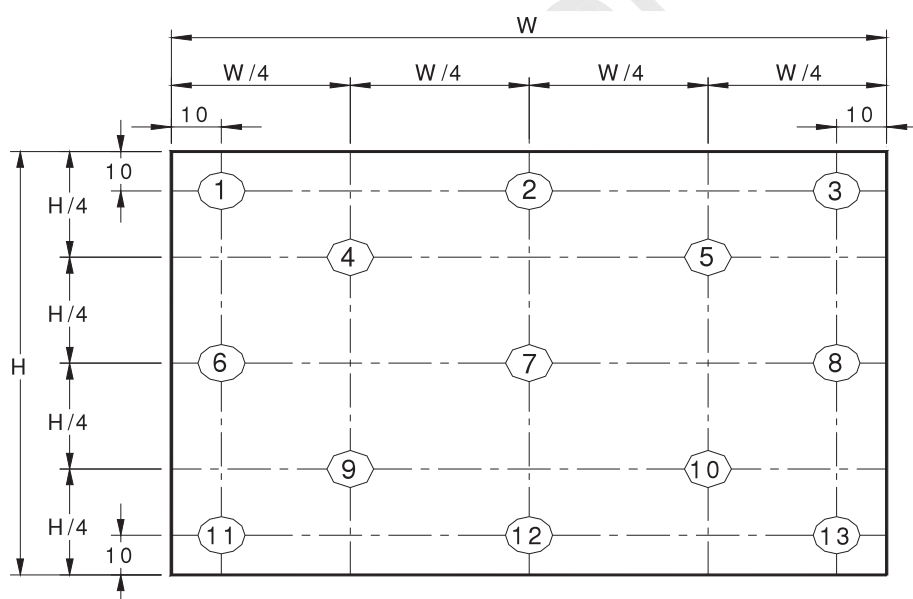
Note 3: The luminance uniformity of 5 or13 points is defined by dividing the maximum luminance values by the minimum test point luminance

$$\delta_{W5} = \frac{\text{Maximum Brightness of five points}}{\text{Minimum Brightness of five points}}$$

$$\delta_{W13} = \frac{\text{Maximum Brightness of thirteen points}}{\text{Minimum Brightness of thirteen points}}$$

Note 4: Measurement method

The LCD module should be stabilized at given temperature for 30 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting

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Backlight for 30 minutes in a stable, windless and dark room, and it should be measured in the center of screen.

Photo detector

Field=2°

50 cm

LCD Panel

TFT-LCD Module

Center of the screen
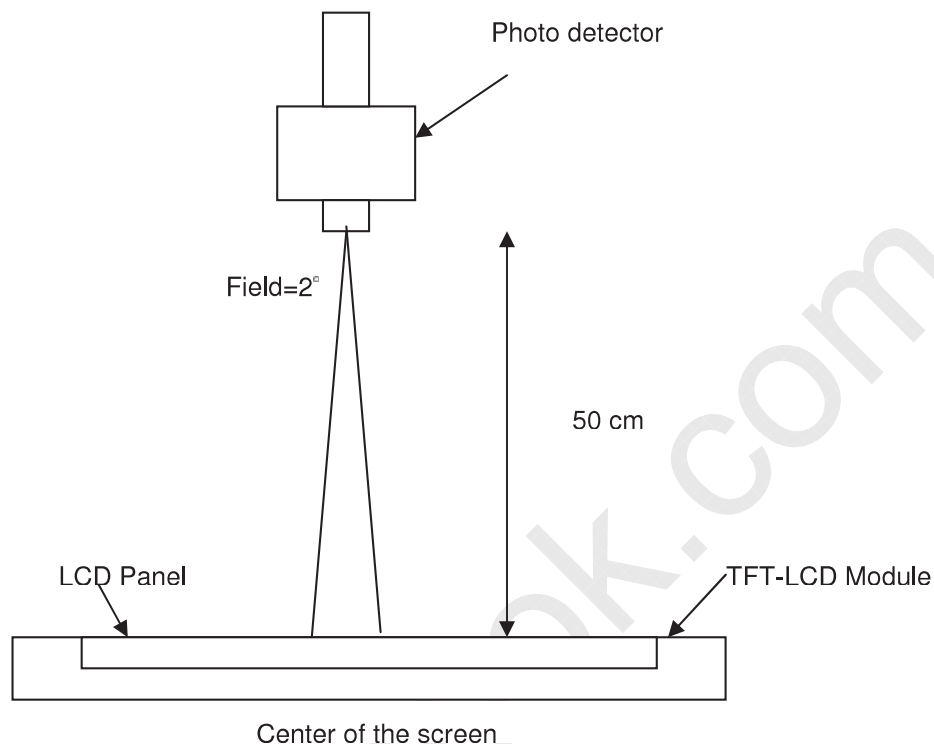
Note 5： Definition of Average Luminance of White (Y_L):

Measure the luminance of gray level 63 at 5 points，Y_L = [L (1)+ L (2)+ L (3)+ L (4)+ L (5)] / 5

L (x) is corresponding to the luminance of the point X at Figure in Note (1).

Note 6： Definition of contrast ratio:
Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$

Note 7： Definition of Cross Talk (CT)
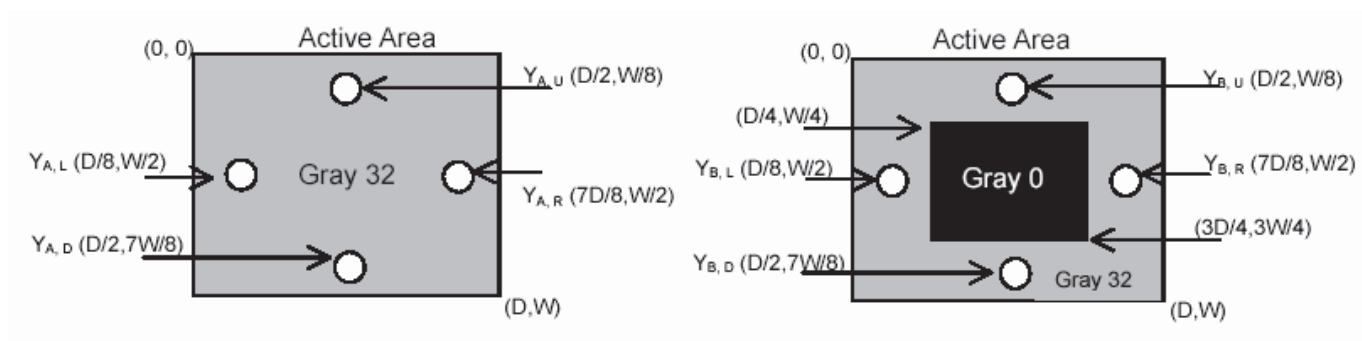
$$CT = |Y_B - Y_A| / Y_A \times 100\ (\%)$$

Where

Y_A = Luminance of measured location without gray level 0 pattern (cd/m2)

Y_B = Luminance of measured location with gray level 0 pattern (cd/m2)

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Note 8: Definition of response time:

The output signals of BM-7 or equivalent are measured when the input signals are changed from "Black" to "White" (falling time) and from "White" to "Black" (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as below.
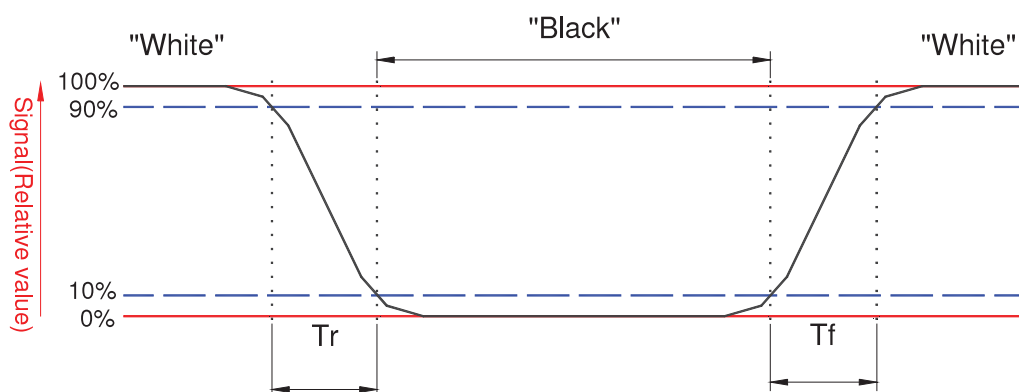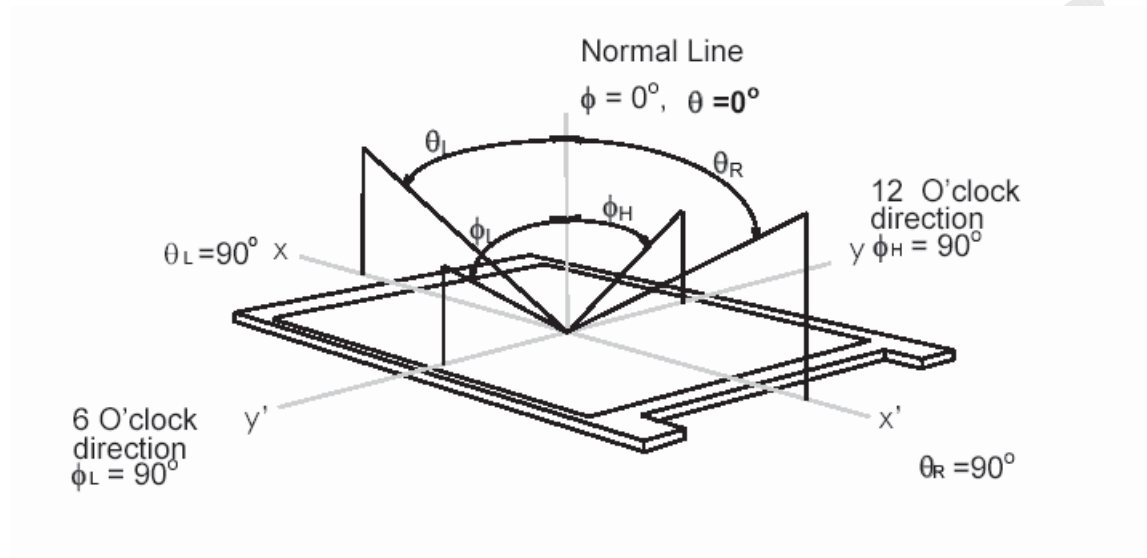
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Note 9. Definition of viewing angle

Viewing angle is the measurement of contrast ratio ≥ 10, at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as follows; 90° (θ) horizontal left and right and 90° (Φ) vertical, high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated about its center to develop the desired measurement viewing angle.
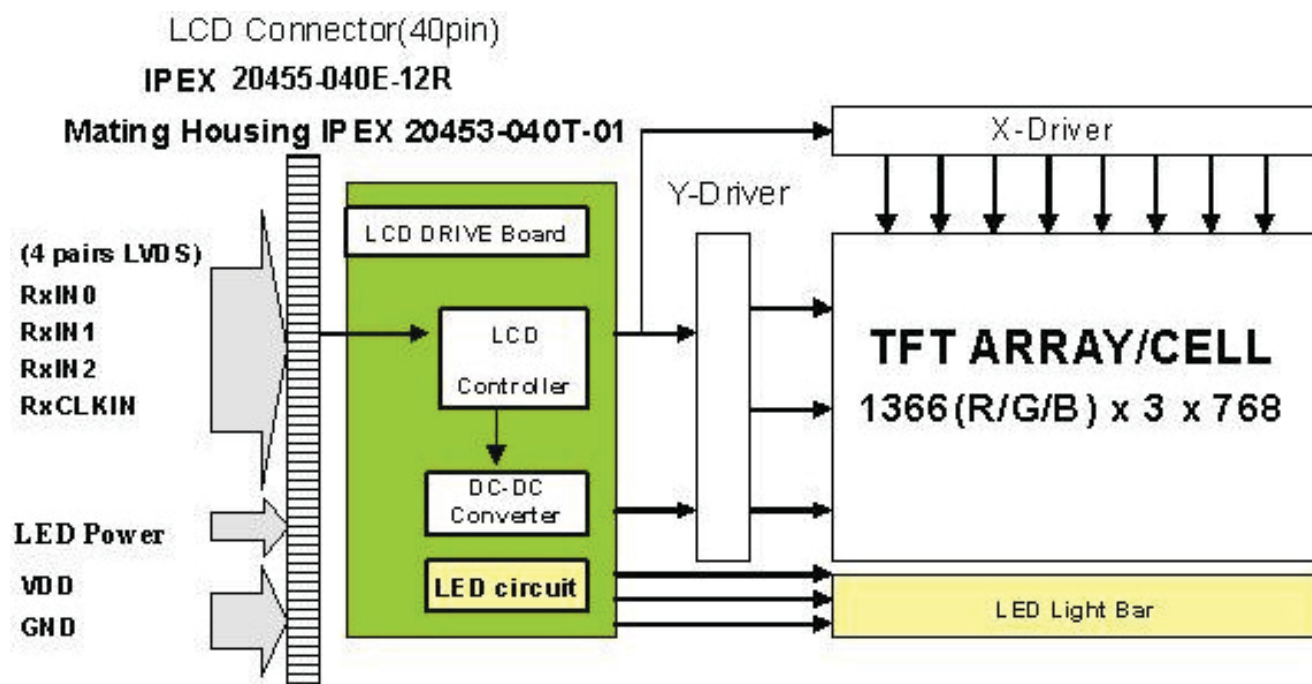
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3. Functional Block Diagram

The following diagram shows the functional block of the 13.3 inches wide Color TFT/LCD 40 Pin one channel Module

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4. Absolute Maximum Ratings

An absolute maximum rating of the module is as following:

4.1 Absolute Ratings of TFT LCD Module

Item	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive Voltage	Vin	-0.3	+4.0	[Volt]	Note 1,2

4.2 Absolute Ratings of Environment

Item	Symbol	Min	Max	Unit	Conditions
Operating Temperature	TOP	0	+50	[^{o}C]	Note 4
Operation Humidity	HOP	5	95	[%RH]	Note 4
Storage Temperature	TST	-20	+60	[^{o}C]	Note 4
Storage Humidity	HST	5	95	[%RH]	Note 4

Note 1: At Ta (25℃)

Note 2: Permanent damage to the device may occur if exceed maximum values

Note 3: LED specification refer to section 5.2

Note 4: For quality performance, please refer to AUO IIS (Incoming Inspection Standard).

Operating Range ⬚⬚⬚⬚   Storage Range   ⬚⬚⬚⬚ + ⬚⬚⬚
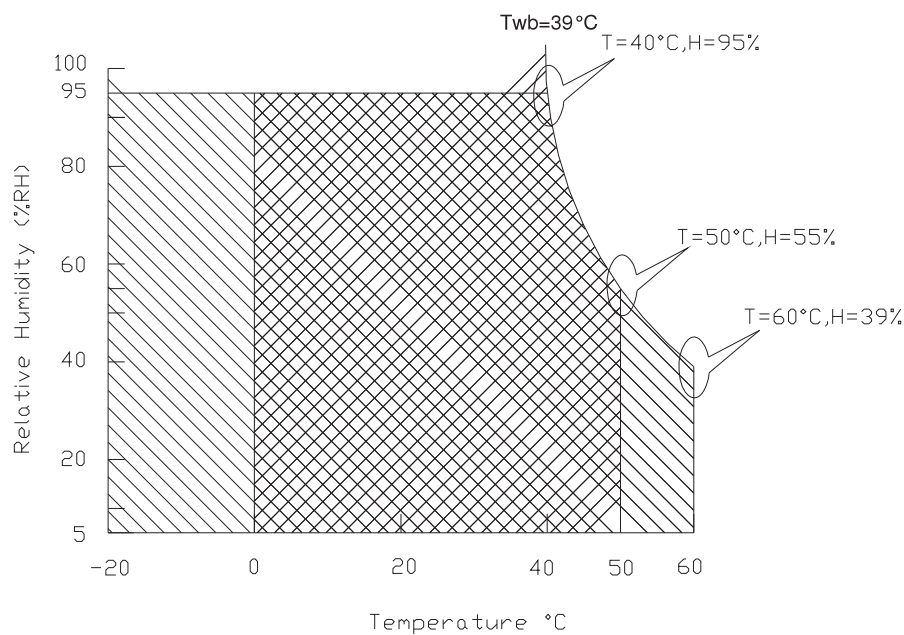
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5. Electrical Characteristics

5.1 TFT LCD Module

#### 5.1.1 Power Specification

Input power specifications are as follows;

The power specification are measured under 25℃ and frame frenquency under 60Hz

Symble	Parameter	Min	Typ	Max	Units	Note
VDD	Logic/LCD Drive Voltage	3.0	3.3	3.6	[Volt]	
PDD	VDD Power	-	-	0.8	[Watt]	Note 1
IDD	IDD Current	-	-	242	[mA]	Note 1
IRush	Inrush Current	-	-	2000	[mA]	Note 2
VDDrp	Allowable Logic/LCD Drive Ripple Voltage	-	-	100	[mV] p-p	

Note 1 : Maximum Measurement Condition : Black Pattern at 3.3V driving voltage. ($P_{max}=V_{3.3}$ x I_{black})

Note 2：Measure Condition

90% 10% 0V 0.5ms 3.3V

Vin rising time
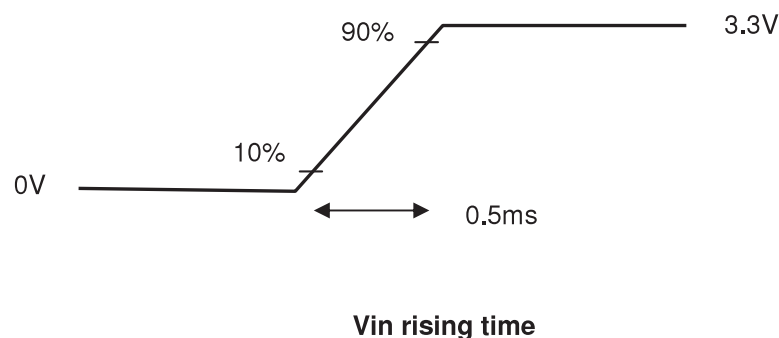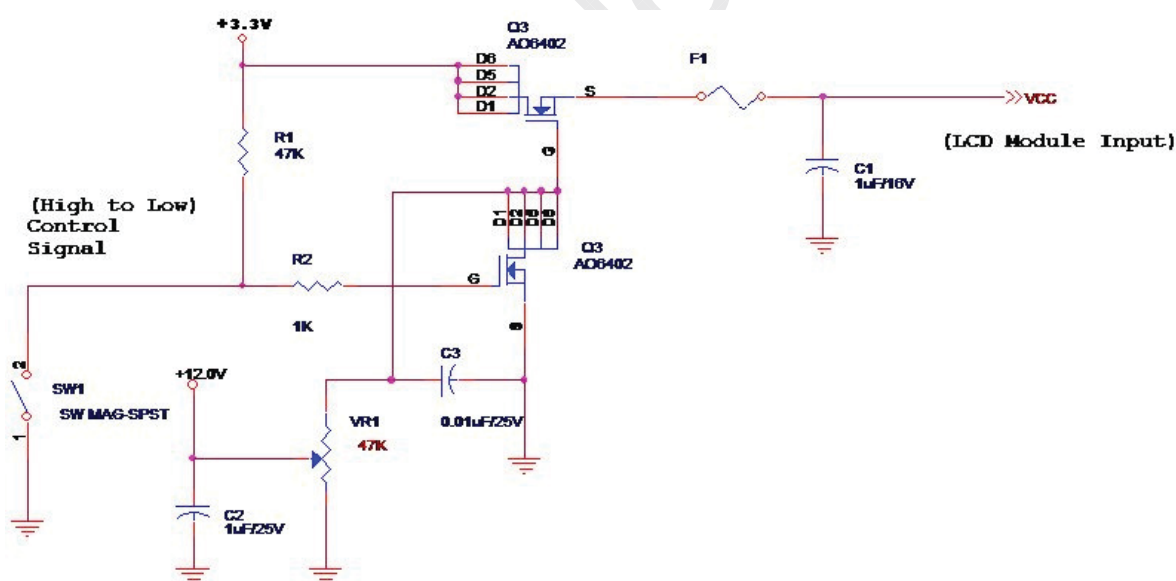
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5.1.2 Signal Electrical Characteristics

Input signals shall be low or High-impedance state when VDD is off.

Signal electrical characteristics are as follows;

Parameter	Condition	Min	Max	Unit
V_{TH}	Differential Input High Threshold (Vcm=+1.2V)		100	[mV]
V_{TL}	Differential Input Low Threshold (Vcm=+1.2V)	-100	-	[mV]
$|V_{ID}|$	Differential Input Voltage	100	600	[mV]
V_{CM}	Differential Input Common Mode Voltage	1.125	1.375	[V]

Note: LVDS Signal Waveform
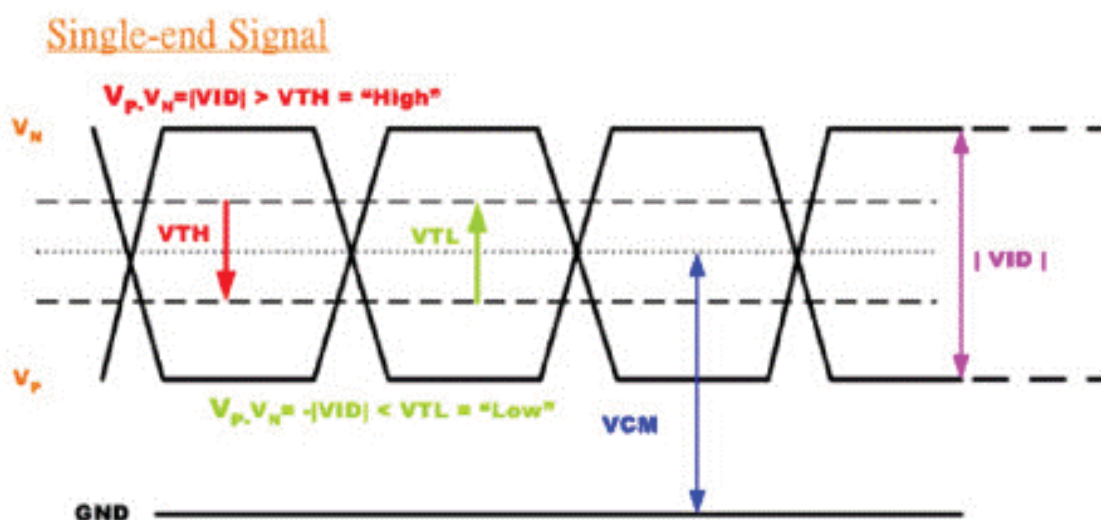
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5.1.3 Color Management Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Remark
Color Management Input High Level	IMG_EN	3.0	-	5.5	[Volt]	Define as Connector Interface (Ta=25℃)
Color Management Input Low Level		-	-	0.8	[Volt]	

5.1.4 Dynamic contrast ratio Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Remark
Dynamic contrast ratio(DCR) Input High Level	DCR_EN	3.0	-	5.5	[Volt]	Define as Connector Interface (Ta=25℃)
Dynamic contrast ratio(DCR) Input Low Level		-	-	0.8	[Volt]	
DCR Mode Duty Index	Duty	55	-	85	%	Note 1
L0 Gray level	Power	0.45P	0.55P	0.65P	Watt	Note 2
L63 Gray level	Power	0.75P	0.85P	0.95P	Watt	

Note 1: The minimums dynamic contrast ratio is setting at darkness, and a maximum is setting at
brightness.

Note 2: The power saving capability refer to original Backlight power consumption (P)

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5.2 Backlight Unit

5.2.1 LED characteristics

Parameter	Symbol	Min	Typ	Max	Units	Condition
Backlight Power Consumption	PLED	-	-	2.2	[Watt]	(Ta=25℃), Note 1 Vin =12V
LED Life-Time	N/A	15,000	-	-	Hour	(Ta=25℃), Note 2 I_F=20 mA

Note 1: Calculator value for reference P_{LED} = V_F (Normal Distribution) * I_F (Normal Distribution) / Efficiency

Note 2: The LED life-time define as the estimated time to 50% degradation of initial luminous.

5.2.2 Backlight input signal characteristics

| Parameter	Symbol	Min	Typ	Max	Units	Remark
LED Power Supply	VLED	6.0	12.0	21.0	[Volt]	Define as Connector Interface (Ta=25℃)
LED Enable Input High Level	VLED_EN	2.5	-	5.5	[Volt]	
LED Enable Input Low Level		-	-	0.8	[Volt]	
PWM Logic Input High Level	VPWM_EN	2.5	-	5.5	[Volt]	
PWM Logic Input Low Level		-	-	0.8	[Volt]	
PWM Input Frequency	FPWM	100	-	20K	Hz	
PWM Duty Ratio	Duty	5	--	100	%	

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6. Signal Interface Characteristic

6.1 Pixel Format Image

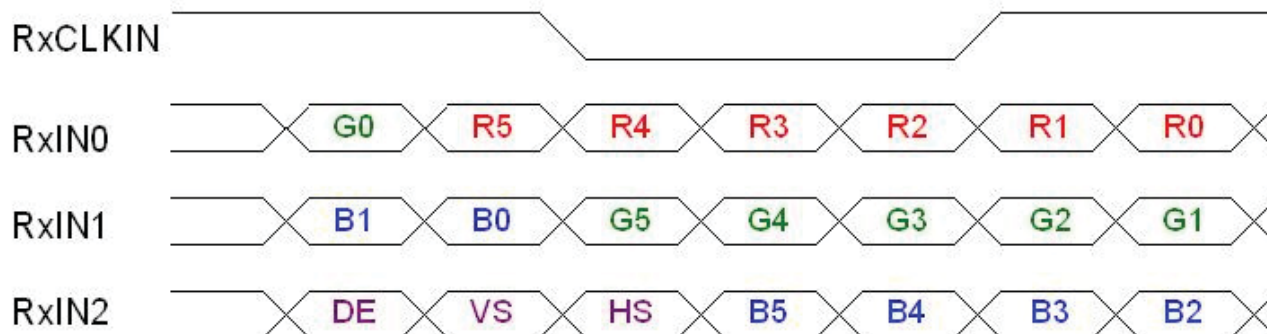Following figure shows the relationship of the input signals and LCD pixel format.
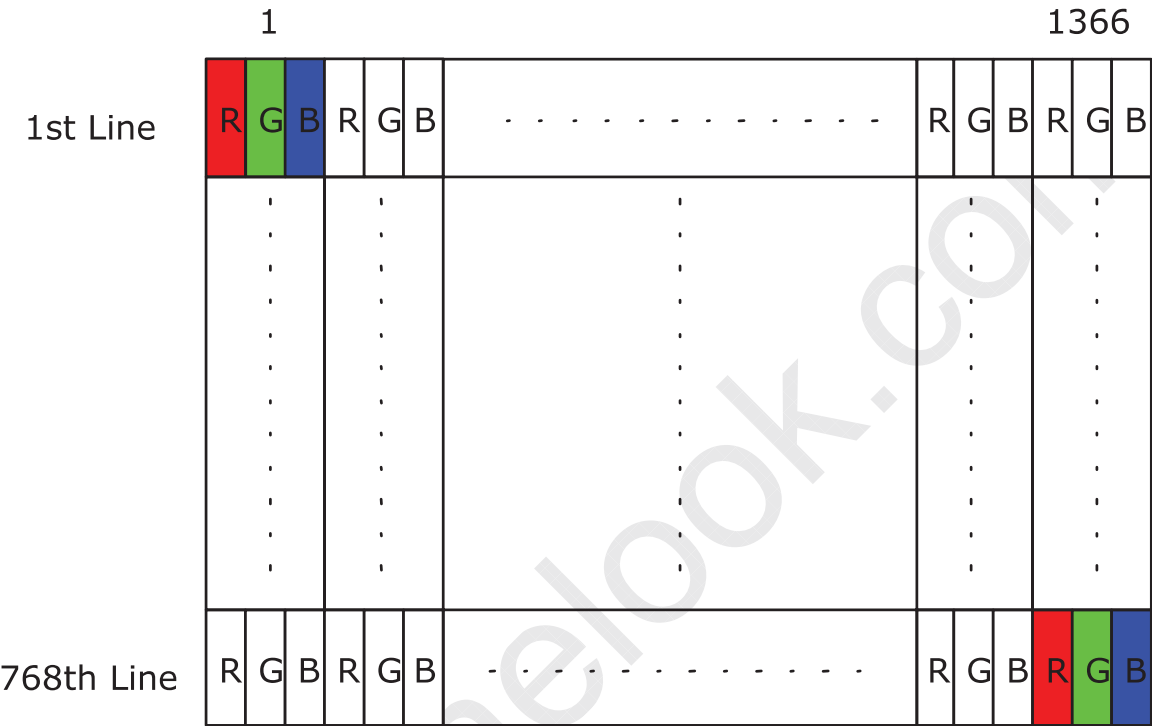
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6.2 The Input Data Format

Signal Name	Description	
R5 R4 R3 R2 R1 R0	Red Data 5 (MSB) Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0 (LSB) Red-pixel Data	Red-pixel Data Each red pixel's brightness data consists of these 6 bits pixel data.
G5 G4 G3 G2 G1 G0	Green Data 5 (MSB) Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0 (LSB) Green-pixel Data	Green-pixel Data Each green pixel's brightness data consists of these 6 bits pixel data.
B5 B4 B3 B2 B1 B0	Blue Data 5 (MSB) Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0 (LSB) Blue-pixel Data	Blue-pixel Data Each blue pixel's brightness data consists of these 6 bits pixel data.
RxCLKIN	Data Clock	The signal is used to strobe the pixel data and DE signals. All pixel data shall be valid at the falling edge when the DE signal is high.
DE	Display Timing	This signal is strobed at the falling edge of RxCLKIN. When the signal is high, the pixel data shall be valid to be displayed.
VS	Vertical Sync	The signal is synchronized to RxCLKIN .
HS	Horizontal Sync	The signal is synchronized to RxCLKIN .

Note: Output signals from any system shall be low or High-impedance state when VDD is off.

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6.3 Integration Interface Requirement

6.3.1 Connector Description

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

Connector Name / Designation	For Signal Connector
Manufacturer	IPEX and TYCO
Type / Part Number	IPEX 20455-040E-12R TYCO 2069716-3
Mating Housing/Part Number	IPEX 20453-040T-11 TYCO 2023344-3

6.3.2 Pin Assignment

LVDS is a differential signal technology for LCD interface and high speed data transfer device.

PIN#	Signal Name	Description
1	NC	No Connection (Reserve)
2	VDD	Power Supply +3.3V
3	VDD	Power Supply +3.3V
4	VEDID	EDID +3.3V Power
5	NC	No Connect (Reserve)
6	CLK_EDID	EDID Clock Input
7	DAT_EDID	EDID Data Input
8	RxOIN0-	-LVDS Differential Data INPUT(Odd R0-R5,G0)
9	RxOIN0+	+LVDS Differential Data INPUT(Odd R0-R5,G0)
10	VSS	Ground
11	RxOIN1-	-LVDS Differential Data INPUT(Odd G1-G5,B0-B1)
12	RxOIN1+	+LVDS Differential Data INPUT(Odd G1-G5,B0-B1)
13	VSS	Ground
14	RxOIN2-	-LVDS Differential Data INPUT(Odd B2-B5,HS,VS,DE)
15	RxOIN2+	+LVDS Differential Data INPUT(Odd B2-B5,HS,VS,DE)
16	VSS	Ground
17	RxOCKIN-	-LVDS Odd Differential Clock INPUT
18	RxOCKIN+	-LVDS Odd Differential Clock INPUT
19	IMG_EN	Color Management Input Level
20	NC	No connection

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21	NC	No connection
22	NC	No connection
23	NC	No connection
24	NC	No connection
25	NC	No connection
26	NC	No connection
27	NC	No connection
28	NC	No connection
29	NC	No connection
30	NC	No connection
31	VLED_GND	LED Ground
32	VLED_GND	LED Ground
33	VLED_GND	LED Ground
34	NC	No Connection (Reserve)
35	VPWM_EN	PWM logic input level
36	VLED_EN	LED enable input level
37	DCR_EN	Dynamic Contrast Ratio Input Level
38	VLED	LED Power Supply 6V-21V
39	VLED	LED Power Supply 6V-21V
40	VLED	LED Power Supply 6V-21V

Connector

Pin 40 **Pin 1**

VLED **NC**
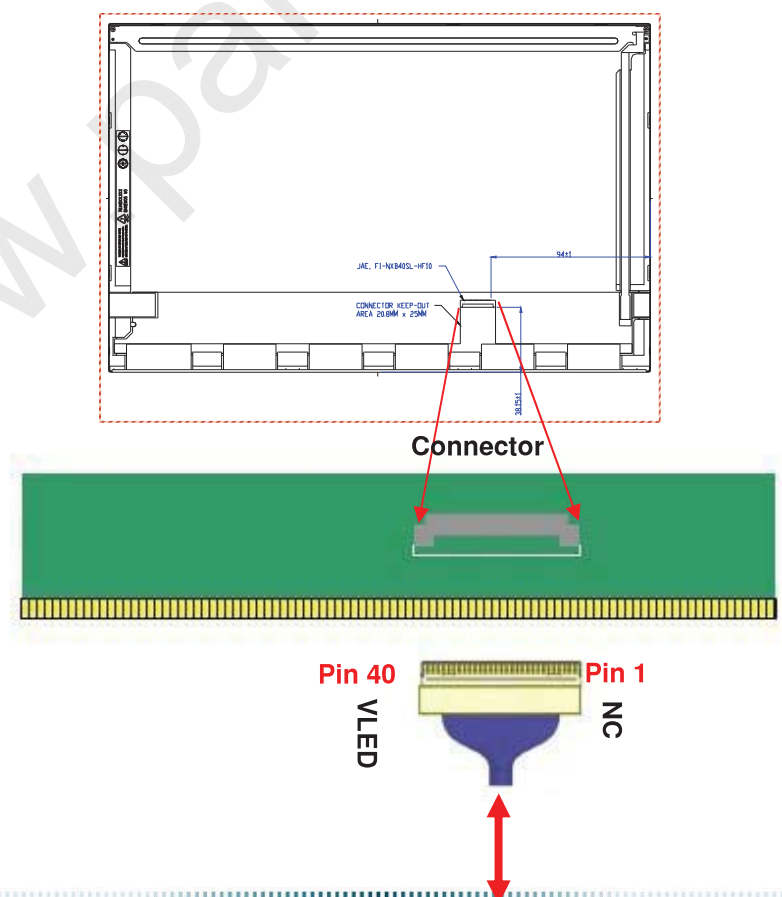
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Note1: Input signals shall be low or High-impedance state when VDD is off.

6.4 Interface Timing

6.4.1 Timing Characteristics

Basically, interface timings should match the 1366x768 /60Hz　manufacturing guide line timing.

Parameter		Symbol	Min.	Typ.	Max.	Unit
Frame Rate		-	---	60	---	Hz
Clock frequency		1/ T_{Clock}	65	69.3	80	MHz
Vertical Section	Period	T_V	776	800	1000	T_{Line}
	Active	T_{VD}		768		
	Blanking	T_{VB}	8	32	323	
Horizontal Section	Period	T_H	1426	1562	2000	T_{Clock}
	Active	T_{HD}		1366		
	Blanking	T_{HB}	60	196	634	

　　Note : DE mode only

6.4.2 Timing diagram

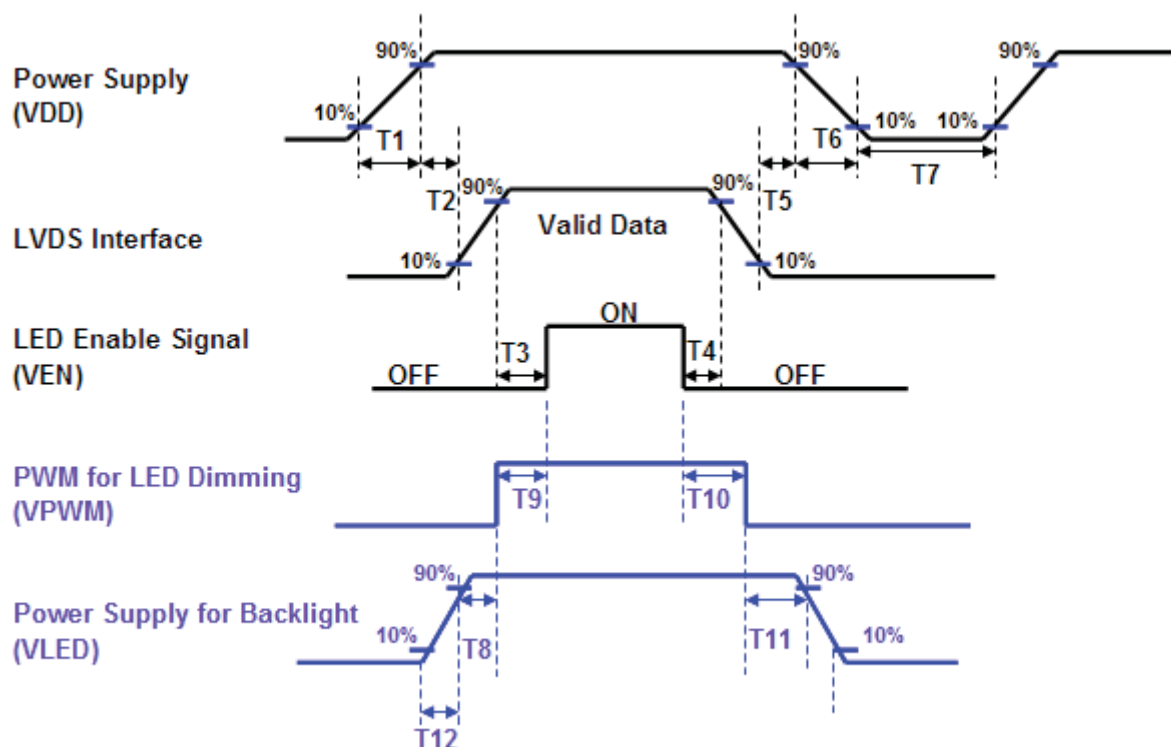**Input Timing Definition (DE Mode)**
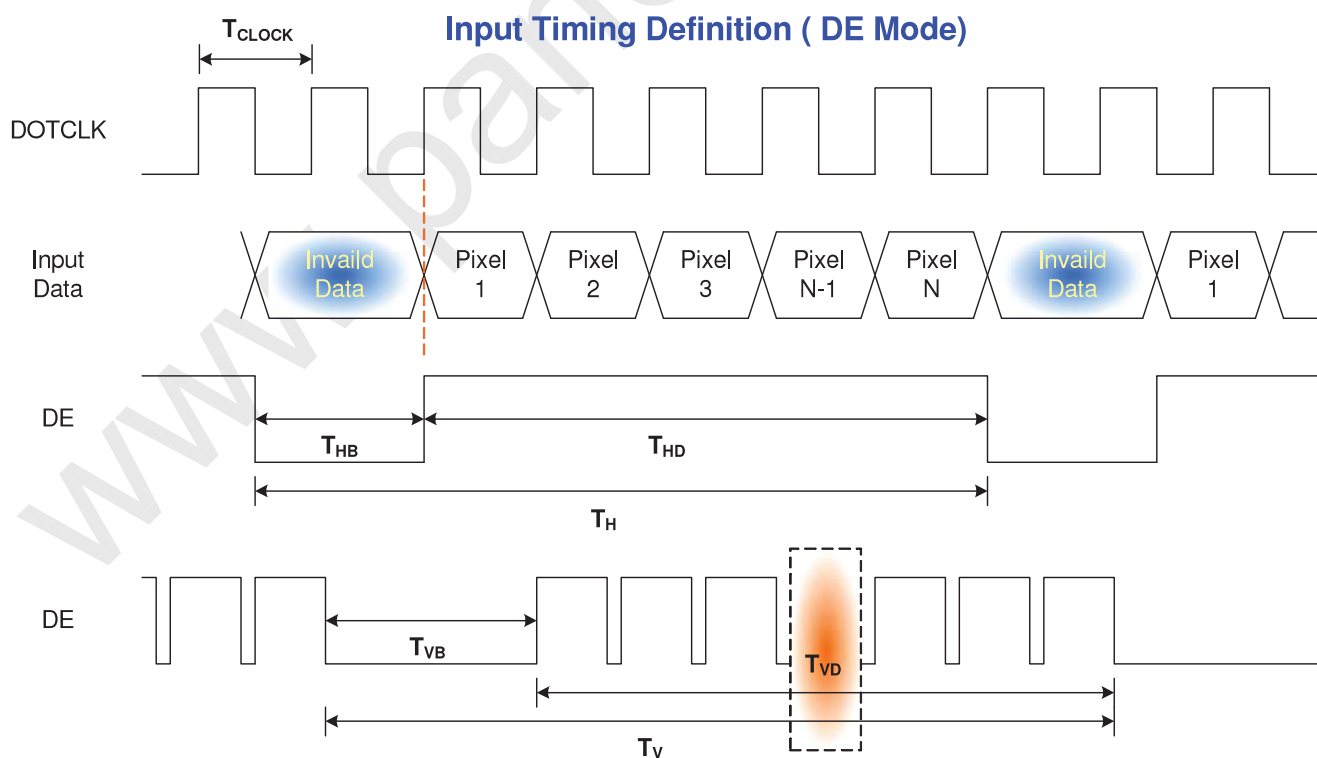
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6.5 Power ON/OFF Sequence

Power on/off sequence is as follows. Interface signals and LED on/off sequence are also shown in the chart. Signals from any system shall be Hi-Z state or low level when VDD is off

Power Sequence Timing			
Parameter	Value		Units
	Min.	Max.	
T1	0.5	10	ms
T2	0	50	
T3	200	-	
T4	200	-	
T5	0	50	
T6	0	10	
T7	500	-	
T8	10	-	
T9	0	-	
T10	0	180	
T11	10	-	
T12	0.5	10	

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7. Panel Reliability Test

7.1 Vibration Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 1.5 G
- Frequency: 10 - 500Hz Random
- Sweep: 30 Minutes each Axis (X, Y, Z)

7.2 Shock Test

Test Spec:

- Test method: Non-Operation
- Acceleration: 220 G , Half sine wave
- Active time: 2 ms
- Pulse: X,Y,Z .one time for each side

7.3 Reliability Test

Items	Required Condition	Note
Temperature Humidity Bias	Ta= 40℃, 90%RH, 300h	
High Temperature Operation	Ta= 50℃, Dry, 300h	
Low Temperature Operation	Ta= 0℃, 300h	
High Temperature Storage	Ta= 60℃, 35%RH, 300h	
Low Temperature Storage	Ta= -20℃, 50%RH, 250h	
Thermal Shock Test	Ta=-20℃to 60℃, Duration at 30 min, 100 cycles	
ESD	Contact : ±8 KV Air : ±15 KV	Note 1

Note1: According to EN 61000-4-2 , ESD class B: Some performance degradation allowed. Self-recoverable. No data lost, No hardware failures.

Remark: MTBF (Excluding the LED): 30,000 hours with a confidence level 90%
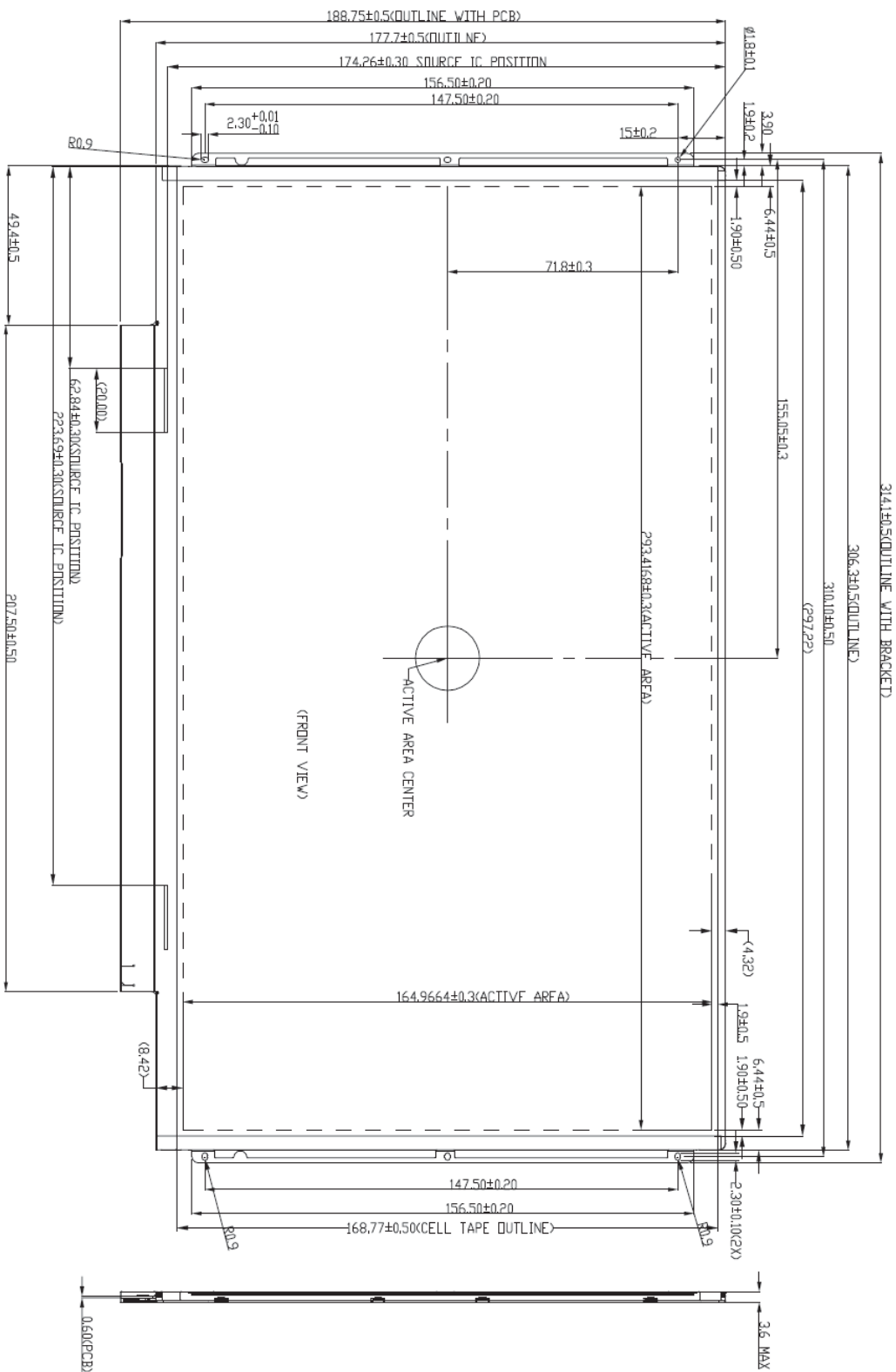
8. Mechanical Characteristics
8.1 LCM Outline Dimension
8.1.1 Standard Front View

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188.75±0.5(OUTLINE WITH PCB)
177.7±0.5(OUTLINE)
174.26±0.30 SOURCE IC POSITION
156.50±0.20
147.50±0.20
2.30 +0.01 −0.10
15±0.2
φ1.8±0.1
1.9±0.2
3.90
R0.9
49.4±0.5
6.44±0.5
1.90±0.50
71.8±0.3
62.84±0.30(SOURCE IC POSITION)
(20.00)
23.69±0.30(SOURCE IC POSITION)
207.50±0.50
155.05±0.3
314.1±0.5(OUTLINE WITH BRACKET)
306.3±0.5(OUTLINE)
310.1±0.50
(297.22)
293.4168±0.2(ACTIVE AREA)
(FRONT VIEW)
ACTIVE AREA CENTER
(4.32)
1.9±0.5
6.44±0.5
1.90±0.50
164.9664±0.3(ACTIVE AREA)
(8.42)
147.50±0.20
156.50±0.20
168.77±0.50(CELL TAPE OUTLINE)
2.30±0.10(2X)
R0.9
R0.9
0.60(PCB)
3.6 MAX

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8.1.2 Standard Rear View & Key components remark and remind

Prevention damage the IC, connector, Capacitor......, we recommend your design (Ex: cable, rib, hardness parts) far away those section those have remarked at this drawing.
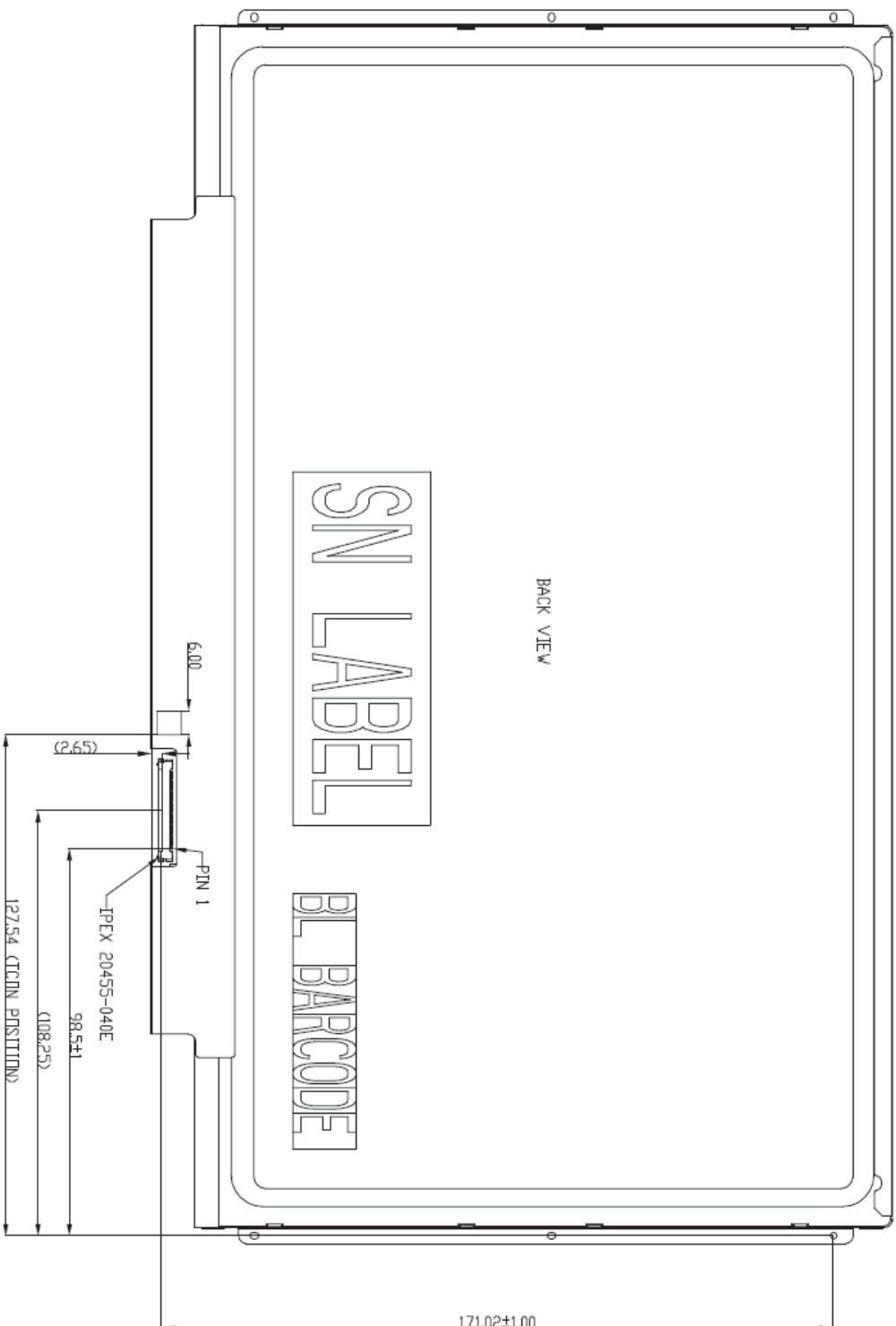
Note: Prevention IC damage, IC positions not allowed any overlap over these areas.

BACK VIEW

SN LABEL

BL BARCODE

PIN 1

FPEX 20455-040E

6.00

(2.65)

98.5±1

(108.25)

127.54 (ICON POSITION)

171.02±1.00

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9. Shipping and Package

9.1 Shipping Label Format

| Build Name(s):	PPID Revision Code(s):
Sub System Test (SST) Working Sample (WS) ENG 2	X00, X01, X02, …, X0n
Product Test (PT) Engineering Sample (ES) ENG 3	X10, X11, X12, …, X1n
System Test (ST) Customer Sample (CS) ENG 4	X20, X21, X22, … X2n
X-Build (XB) Mass Production (MP) ENG 5	A00, A01, A02, … A0n

One step solution for LCD / PDP / OLED panel application: Datasheet, inventory and accessory. www.panelook.com
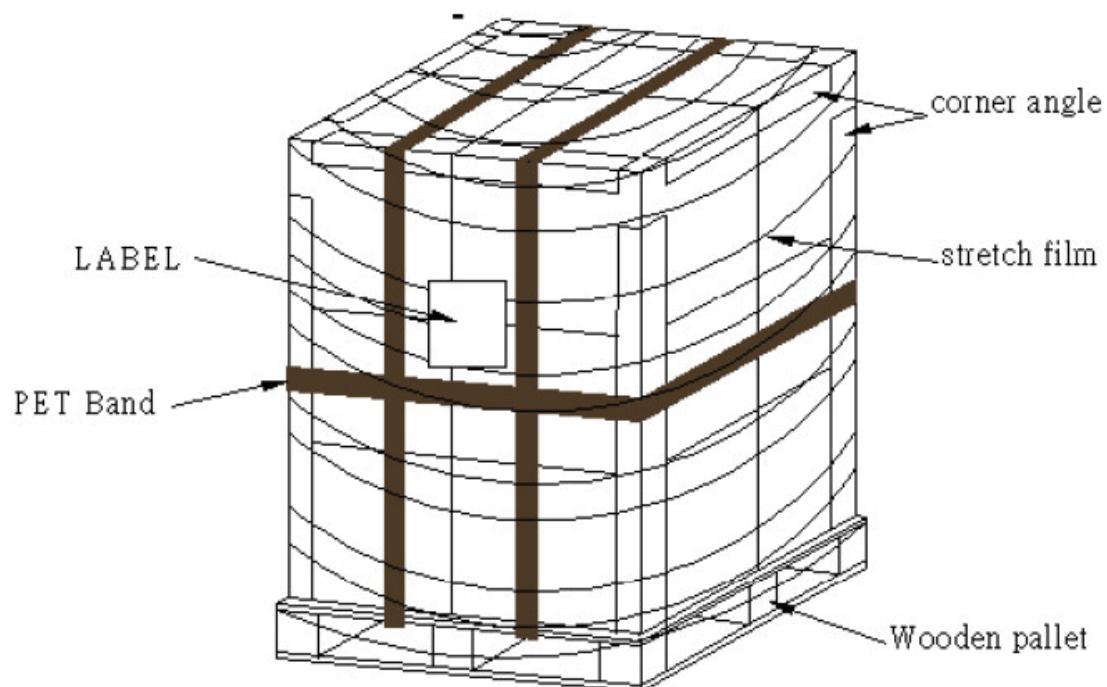
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9.2 Carton Package

The outside dimension of carton is 455 (L)mm x 380 (W)mm x 355 (H)mm
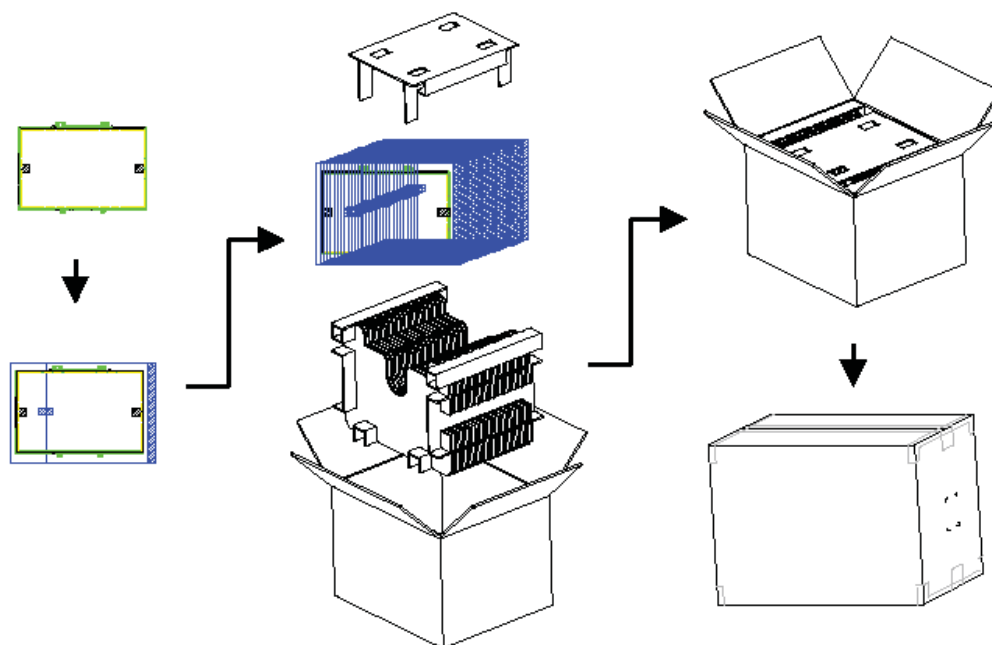
9.3 Shipping Package of Palletizing Sequence

corner angle

stretch film

LABEL

PET Band

Wooden pallet

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10. Appendix

10.1 EDID Description

	Byte (hex)	Field Name and Comments	Value (hex)	Value (binary)	Value (DEC)
Header	0	Header	00	00000000	0
	1	Header	FF	11111111	255
	2	Header	FF	11111111	255
	3	Header	FF	11111111	255
	4	Header	FF	11111111	255
	5	Header	FF	11111111	255
	6	Header	FF	11111111	255
	7	Header	00	00000000	0
Vendor / Product EDID Version	8	EISA manufacture code = 3 Character ID	06	00000110	6
	9	EISA manufacture code (Compressed ASCII)	AF	10101111	175
	0A	Panel Supplier Reserved – Product Code	2C	00101100	44
	0B	Panel Supplier Reserved – Product Code	31	00110001	49
	0C	LCD module Serial No - Preferred but Optional ("0" if not used)	00	00000000	0
	0D	LCD module Serial No - Preferred but Optional ("0" if not used)	00	00000000	0
	0E	LCD module Serial No - Preferred but Optional ("0" if not used)	00	00000000	0
	0F	LCD module Serial No - Preferred but Optional ("0" if not used)	00	00000000	0
	10	Week of manufacture	00	00000000	0
	11	Year of manufacture	14	00010100	20
	12	EDID structure version # = 1	01	00000001	1
	13	EDID revision # = 4	04	00000100	4
Display Parameters	14	Video I/P definition = Digital I/P (90 (6-bit) or A0 (8-Bit))	90	10010000	144
	15	Max H image size = ?? cm(Rounded to cm)	1D	00011101	29
	16	Max V image size = ?? cm(Rounded to cm)	10	00010000	16
	17	Display gamma = (gamma ×100)-100 = Example: (2.2×100) – 100 = 120	78	01111000	120
	18	Feature support	02	00000010	2
Panel Color Coordinates	19	Red/Green Low bit (RxRy/GxGy)	15	00010101	21
	1A	Blue/White Low bit (BxBy/WxWy)	85	10000101	133
	1B	Red X Rx = 0.???	97	10010111	151
	1C	Red Y Ry = 0.???	58	01011000	88
	1D	Green X Rx = 0.???	53	01010011	83
	1E	Green Y Ry = 0.???	8A	10001010	138
	1F	Blue X Rx = 0.???	26	00100110	38
	20	Blue Y Ry = 0.???	25	00100101	37
	21	White X Rx = 0.???	50	01010000	80
	22	White Y Ry = 0.???	54	01010100	84
Established Timings	23	Established timings 1 (00h if not used)	00	00000000	0
	24	Established timings 2 (00h if not used)	00	00000000	0
	25	Manufacturer's timings (00h if not used)	00	00000000	0

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Standard Timing ID	26	Standard timing ID1 (01h if not used)	01	00000001	1
	27	Standard timing ID1 (01h if not used)	01	00000001	1
	28	Standard timing ID2 (01h if not used)	01	00000001	1
	29	Standard timing ID2 (01h if not used)	01	00000001	1
	2A	Standard timing ID3 (01h if not used)	01	00000001	1
	2B	Standard timing ID3 (01h if not used)	01	00000001	1
	2C	Standard timing ID4 (01h if not used)	01	00000001	1
	2D	Standard timing ID4 (01h if not used)	01	00000001	1
	2E	Standard timing ID5 (01h if not used)	01	00000001	1
	2F	Standard timing ID5 (01h if not used)	01	00000001	1
	30	Standard timing ID6 (01h if not used)	01	00000001	1
	31	Standard timing ID6 (01h if not used)	01	00000001	1
	32	Standard timing ID7 (01h if not used)	01	00000001	1
	33	Standard timing ID7 (01h if not used)	01	00000001	1
	34	Standard timing ID8 (01h if not used)	01	00000001	1
	35	Standard timing ID8 (01h if not used)	01	00000001	1
Timing Descripter #1	36	Pixel Clock/10,000 (LSB)	4A	01001010	74
	37	Pixel Clock/10,000 (MSB)	1D	00011101	29
	38	Horizontal Active = ???? pixels (lower 8 bits)	56	01010110	86
	39	Horizontal Blanking (Thbp) = 320 pixels (lower 8 bits)	C4	11000100	196
	3A	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000	80
	3B	Vertical Active = ??? lines	00	00000000	0
	3C	Vertical Blanking (Tvbp) = ?? lines (DE Blanking typ. for DE only panels)	20	00100000	32
	3D	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000	48
	3E	Horizontal Sync, Offset (Thfp) = ?? pixels	30	00110000	48
	3F	Horizontal Sync, Pulse Width = ??? pixels	20	00100000	32
	40	Vertical Sync, Offset (Tvfp) = ? lines Sync Width = ? lines	36	00110110	54
	41	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000	0
	42	Horizontal Image Size =??? mm	25	00100101	37
	43	Vertical image Size = ??? mm	A4	10100100	164
	44	Horizontal Image Size / Vertical image size	10	00010000	16
	45	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000	0
	46	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000	0

	47	Bit[7] 0: Non-interlace, 1: Interlace
		Bit[6:5] 00: Normal display, no strero, see VESA EDID Spec 1.3
		Bit[4:3] 00: Analog composite, 01: Bipolar analog composite, 10: Digital
		            composite, 11: Digital separate
		Bit[2:1] : The interpretation of bits 2 and 1 is dependent on the decode of
		            bits 4 and 3 - see VESA EDID Spec 1.3
		Bit[0] : See VESA EDID Spec 1.3
		==> fix=1A
			1A	00011010	26

Descripter #2 (=Timing Descripter	48	Pixel Clock/10,000 (LSB)	87	10000111	135
	49	Pixel Clock/10,000 (MSB)	13	00010011	19

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	4A	Horizontal Active = xxxx pixels (lower 8 bits)	56	01010110	86
	4B	Horizontal Blanking (Thbp) = xxxx pixels (lower 8 bits)	C4	11000100	196
	4C	Horizontal Active/Horizontal blanking (Thbp) (upper4:4 bits)	50	01010000	80
	4D	Vertical Active = xxxx lines	00	00000000	0
	4E	Vertical Blanking (Tvbp) = xxxx lines (DE Blanking typ. for DE only panels)	20	00100000	32
	4F	Vertical Active : Vertical Blanking (Tvbp) (upper4:4 bits)	30	00110000	48
	50	Horizontal Sync, Offset (Thfp) = xxxx pixels	30	00110000	48
	51	Horizontal Sync, Pulse Width = xxxx pixels	20	00100000	32
	52	Vertical Sync, Offset (Tvfp) = xx lines Sync Width = xx lines	36	00110110	54
	53	Horizontal Vertical Sync Offset/Width upper 2 bits	00	00000000	0
	54	Horizontal Image Size =xxx mm	25	00100101	37
	55	Vertical image Size = xxx mm	A4	10100100	164
	56	Horizontal Image Size / Vertical image size	10	00010000	16
	57	Horizontal Border = 0 (Zero for Notebook LCD)	00	00000000	0
	58	Vertical Border = 0 (Zero for Notebook LCD)	00	00000000	0

	59	Bit[7] 0: Non-interlace, 1: Interlace
		Bit[6:5] 00: Normal display, no strero, see VESA EDID Spec 1.3
		Bit[4:3] 00: Analog composite, 01: Bipolar analog composite, 10: Digital
		                        composite, 11: Digital separate
		Bit[2:1] : The interpretation of bits 2 and 1 is dependent on the decode of
		                        bits 4 and 3 - see VESA EDID Spec 1.3
		Bit[0] : See VESA EDID Spec 1.3
		==> fix=1A
			1A	00011010	26

Timing Descripter #3 Dell specific information	5A	Flag	00	00000000	0
	5B	Flag	00	00000000	0
	5C	Flag	00	00000000	0
	5D	Data Type Tag: Alphanumeric Data String (ASCII) ==> fix=FE	FE	11111110	254
	5E	Flag	00	00000000	0
	5F	Dell P/N 1st Character	4B	01001011	75
	60	Dell P/N 2nd Character	4B	01001011	75
	61	Dell P/N 3rd Character	37	00110111	55
	62	Dell P/N 4th Character	33	00110011	51
	63	Dell P/N 5th Character	36	00110110	54
	64	EDID Revision Bit[6:0] See charts below Bit[7] 0: X-rev, 1: A-rev	80	10000000	128
	65	Manufacturer P/N	42	01000010	66
	66	Manufacturer P/N	31	00110001	49
	67	Manufacturer P/N	33	00110011	51
	68	Manufacturer P/N	33	00110011	51
	69	Manufacturer P/N	58	01011000	88
	6A	Manufacturer P/N	57	01010111	87
	6B	Manufacturer P/N (If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	33	00110011	51
Timing Descri pter #4	6C	Flag	00	00000000	0
	6D	Flag	00	00000000	0

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	6E	Flag	00	00000000	0
	6F	Data Type Tag:　Manufacturer Specified Data 00 ==>fix=00	00	00000000	0
	70	Flag	00	00000000	0
	71	Color Management	00	00000000	0
	72	Panel Structure	41	01000001	65
	73	Frame Rate	21	00100001	33
	74	Light Controller Interface and Luminance	96	10010110	150
	75	Outdoor Features	01	00000001	1
	76	Multi-Media Features	11	00010001	17
	77	Multi-Media Features	00	00000000	0
	78	Special Features #1	00	00000000	0
	79	Special Features #2	01	00000001	1
	7A	Special Features #3	01	00000001	1
	7B	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	0A	00001010	10
	7C	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000	32
	7D	(If <13 char, then terminate with ASCII code 0Ah, set remaining char = 20h)	20	00100000	32
Checksum	7E	Extension flag　(# of optional 128 EDID extension blocks to follow, Typ = 0)	00	00000000	0
	7F	Checksum　(The 1-byte sum of all 128 bytes in this EDID block shall = 0)	13	00010011	19

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10.2 Color Standardization Photographs

Standardization photographs have declared by AUO

TFT panel character has corresponding with photographs optimum setting

Darkness Pattern	Darkness-1				
Brightness Pattern	Brightness-1 Brightness-2				
Text Optimization	Texture Optimum-1 Texture Optimum-2				
High Contrast Ratio Pattern	High contrast ratio-1 High contrast ratio-2 High contrast ratio-3 High contrast ratio-4				
Visual High Color Saturation	Visual high color-1 Visual high color-2 Visual high color-3 Visual high color-4 Visual high color-5				
Sharpness Pattern	Sharpness-1 Sharpness-2 Sharpness-3 Sharpness-4 Sharpness-5 Sharpness_8				